

A School-based Smoking Prevention Program for Adolescent Girls in New York City

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Synopsis

Teenaged girls comprise the largest percentage of new cigarette smokers in the United States today.

Factors contributing to smoking initiation include peer pressure, family and social influences, cigarette availability, and cigarette advertising. Because three-quarters of smokers become dependent on cigarettes by age 20, smoking prevention programs aimed at the adolescent population have great potential. The proposed program outlined is directed at girls 12 to 18 years of age in New York City. Among the objectives are increasing students' knowledge of the short- and long-term health effects of smoking and awareness of the social factors which lead to smoking. Participants would be taught social skills and behaviors which could help them to resist initiating smoking, by such activities as assertiveness training through role playing. Endurance sports activities would be emphasized while learning of the effects of smoking on physical conditioning. The costs of such a program are estimated, and classroom activities are outlined.

THE PROPOSED school-based smoking prevention program described in this paper targets adolescent girls 12 to 18 years old in District 6 in New York City. The area covers the upper west side of Manhattan from 135th St. to 218th St. and includes 5 junior high schools and 1 senior high school. The 12-week program includes information regarding health effects of smoking; discussion of social and cultural influences which can encourage smoking behavior; social skills training utilizing role playing, assertiveness training and peer support techniques; discussion of cigarette advertising, its messages, and its impact on self-image; and an ongoing emphasis on endurance sports as part of the physical education program.

To be effective, these components must be integrated into the larger school "culture." New York State smoking policy guidelines would be implemented and school-wide activities—such as assemblies, sports, and poster contests—would emphasize the value of healthy living. Faculty awareness of, and orientation in, the issues of smoking prevention is a key component of this program.

The Problem

Teenaged girls currently comprise the largest percentage of new cigarette smokers (1). A National Institute on Drug Abuse survey showed that in 1975 about 25 percent of boys smoked daily, compared to less than 25 percent of girls (2). By 1984, more than 20 percent of teenaged girls smoked daily, compared to 15 percent of boys. This shift in smoking behavior from a largely male to a female adolescent phenomenon has been attributed to peer pressure, social influences, the availability of cigarettes, and cigarette advertising (3a).

The deleterious effect of smoking on health is supported by the scientific literature. The Surgeon General reported in 1982 that a causal relationship existed between smoking and lung cancer, as well as cancers of the esophagus, bladder, kidney, larynx and oral cavity, pancreas, and stomach. Eighty-five percent of lung cancer deaths and 30 percent of all cancer deaths are attributable to smoking (4a). Lung cancer incidence among Ameri-

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can females increased more than two and a half times from 1950-77 (4b), and in 1985 it surpassed breast cancer as the most common primary cancer among women (3b). The 1983 Report of the Surgeon General identified smoking as the most important modifiable risk factor for coronary heart disease (CHD). Thirty percent of all CHD deaths are attributable to smoking (5a). In 1984 the Surgeon General linked smoking with chronic obstructive lung disease (COLD), including emphysema and chronic obstructive bronchitis. Eighty to 90 percent of all deaths from COLD are attributable to smoking (6a). During the period 1970-80 there was a 5-fold increase in mortality due to chronic obstructive lung disease among white women, and a 2-fold increase among nonwhite women (3c).

There are sex-specific risks associated with smoking among women. Cigarette smoking increases the risk of coronary heart disease among women several times, and among oral contraceptive users about 10 times (7a). Relationships exist between smoking during pregnancy and reduced birthweight of infants, spontaneous abortion, sudden infant death syndrome, fetal growth retardation, preterm delivery, and intellectual and behavioral deficits in the child (7b, 8a). Women tend to have less success in stopping smoking than men. Since the first Surgeon General's Report on Smoking, there has been only a 5 percent decrease in smoking among women compared with a 20 percent decrease among men. (3d).

Current Literature Summarized

Leventhal and Cleary identified five stages which lead to adult smoking, (a) preparation and anticipation, such as social influences, values, and modeling; (b) initiation, or trying the first cigarette; (c) learning and becoming habituated, that is, repeated

experimental smoking; (d) habituation, or regular smoking; and (e) maintenance, or physical dependence on nicotine in adulthood (9).

The initiation of smoking among females in the United States is most likely to occur during the ages of 12 to 14 years (7c), and takes place most often in a social context. Initiation is influenced by adult models. Within the family context, attitudes toward smoking are developed, cigarettes first become available, and behaviors regarding smoking are reinforced. According to the 1979 Surgeon General's Report, parents who smoke are known to influence their children's smoking behaviors. In families in which both parents smoke, 20.7 percent of girls are smokers, compared with 7.6 percent of girls in families where neither parent smokes. Of girls who smoke regularly, 25 to 26 percent have older siblings who smoke. If an older sibling and both parents smoke, the child is four times more likely to smoke than one who has no smoking model in the family (7d).

Socioeconomic factors are related to smoking, with working class females more likely to initiate the behavior. Williams-Lepre's qualitative study of girls in two New Jersey high schools suggests that among those planning to enter the job market after high school, smoking acts as an outward manifestation of maturity or adulthood (10a). Ekert (11a) and Lanese and coworkers (12a) observed that smoking is used by noncollege-bound students as a symbol of group identification and alienation from the school culture. Using a multivariate approach to study 6,000 junior high and high school students, Lanese and coworkers observed that teen-aged smokers are less likely to engage in extracurricular activities than those who do not smoke (12b). In her study of 200 high school students in a midwestern industrial suburb, Ekert noted that smoking and smoking-related behavior function as key social symbols. She found that adolescents begin smoking as part of a "complex . . . process of social differentiation between future members of the working class on the one hand and the middle class on the other" (11b).

Williams-Lepre noted that smoking usually is a shared activity with important socializing functions for the young girl. Girls in her sample tended to smoke most often at parties and social get-togethers. Initiation into the social group and maintenance of membership within it very often involved the willingness to smoke (10b). Lanese and coworkers noted that of all variables in their study, peer smoking was the strongest predictor of smoking behavior. Students having a best friend

who smoked were 9 times more likely to be smokers (12c).

Lack of autonomy and consequent feelings of frustration with childhood surroundings seem to play a part in the initiation of smoking behavior. Williams-Lepre observed that this restlessness may be attributable to the "difficulty of the role passage which adolescence in a complex society involves" (10c). Other research indicates that smoking may be used as a means of alleviating adolescent feelings of anxiety. Newman (13) and Reeder (14) observed that cigarette smoking is a type of compensatory behavior for those who are not succeeding academically. In a study of 500 black youth in Harlem, Brunswick and Messeri (15) found that among adolescent females, the strongest predictors of smoking behavior were worried attitudes about school performance, coupled with poor school achievement.

Williams-Lepre found that smoking was commonly used to avoid other behaviors which were considered to have worse consequences, such as overeating. She noted that "The evolution of smoking from a social habit to a mechanism for managing difficulties is a critical progression." Developing emotional dependence during early adolescence suggests that the teenager probably will continue this behavior throughout the stressful changes of the late teens and early twenties, at which time physical dependence results (10d).

The impact of tobacco advertising on American youth is undoubtedly great, but it has not been documented carefully. Tobacco companies in the United States spend nearly \$2 billion annually on advertising and promotion (16). Tobacco industry marketing analyses of the youth market have resulted in youth-oriented music and sports promotions, newspaper and magazine advertisements with coupons, and free cigarette samples (17).

Tobacco ads in women's magazines, some with an estimated readership of 20 million, portray smokers as healthy, glamorous, sociable, slim, and independent (18). For the adolescent American girl, who is struggling to establish her identity amid changing cultural role expectations, these models provide attractive answers.

Project Objectives

Effective prevention programs contain components which address multiple factors associated with smoking (19, 20). Primary prevention which targets potential cigarette smokers before habituation occurs appears to be a promising strategy. The

following are the objectives of a suggested school-based smoking prevention program.

Increase students' knowledge of smoking's short-term and long-term health effects. Despite widespread public recognition of smoking's harmful effects on health, gaps in the public's knowledge still exist. In 1983, for example, the Surgeon General observed that the public is largely unaware that smoking is a risk factor for heart disease (5b). An emphasis on the short-term health effects of smoking, such as shortness of breath and dizziness, may have an impact on teenagers, who generally are not future-oriented.

Increase understanding of the influences on smoking behavior of peers, family, government regulations, and the news media. Teenagers could be encouraged to develop awareness of the complexity of social factors which lead to the adoption of smoking behavior.

Teach social skills and behaviors which could help the teenager to resist smoking. Studies suggest that information alone is insufficient motivation to change (21); knowledge combined with social skills, such as assertiveness training through role play, is more likely to result in behavior changes.

Establish and enforce no smoking policies within schools as a first step toward developing a supportive nonsmoking environment. The New York State Education Department has published guidelines for developing school policies (22). Such guidelines can be a basis for policy development by faculty and students.

Orient teachers in an integrated approach to health in the school. Green and coworkers (23) have suggested that health education is most effective when teachers are appropriately trained. Because such programs are interdisciplinary, teachers need to understand and support the overall objectives.

Project Methodology

To implement the objectives outlined, a 12-week school-based smoking prevention program is suggested as part of a year-long health education or drug education curriculum in junior and senior high schools. Knowledge, attitudinal, and skills components comprise the classroom sessions (see box). The curriculum is designed to address the particular needs of teenaged girls and can be

'... evidence suggests that cigarette smoking can be the first stage in a progressive cycle of drug dependency and addiction.'

Subjects of classroom sessions, part of a suggested 12-week, school-based smoking prevention program for adolescent girls

Weeks 1-2: Lecture-discussion of the short- and long-term effects of smoking on health

Long-term effects on the cardiopulmonary system and fetal development

Short-term effects—dizziness, rapid pulse, loss of endurance

Smoking and smoking-related disease trends in the United States

Week 3: Group discussion of the social influences on smoking

Role of the family, peers, and the advertising media on smoking behavior: who in your family smokes, when, and why? Do you or your friends smoke, where, and why? What messages do cigarette advertisements carry? Are they accurate?

Homework assignment: cut out a cigarette ad from a favorite family magazine and identify its messages. Take a walk around your neighborhood and count the billboards advertising cigarettes.

Week 4: Media influences on behavior

Each student discusses her cigarette advertisement and interprets the underlying message.

How many cigarette billboards were counted? What brands were advertised most frequently?

Teacher facilitates and summarizes the overall themes.

Weeks 5-6: Smoking as a coping mechanism; discussion of alternatives

When and at what times are you tempted to smoke (when nervous, before exams, instead of eating, at parties)?

What are some alternative choices at those times (exercise, such as jumping rope, running, walking, and dancing)?

How can you and your friends support each other in nonsmoking behaviors?

Weeks 7-12: Social skills acquisition through role-playing

Drama consultants provide instruction in assertiveness techniques through practice of a variety of responses and development of peer support for nonsmoking.

Final assembly program

adapted for boys as well. In addition to the classroom component, special sessions and projects would include a 2-hour teacher orientation session to be conducted at the beginning of the semester to emphasize the importance of an integrated curriculum in promoting health. Specific components of the program and the key role of the faculty in promoting nonsmoking norms would be discussed.

Endurance sports events, such as relay races and jump rope contests, conducted by the physical education staff, would be held throughout the semester with a theme of "developing healthy hearts at our school."

A poster contest sponsored by the art and health education departments with the theme "Smoking Stinks" would be directed at deglamorizing the media image of smoking and promoting the desirable aspects of a healthy heart and the attractiveness of a healthy body.

A letter-writing campaign to State representatives in support of stronger anti-smoking regulations would be incorporated into a social studies lesson. This could trigger a discussion of citizens' roles in a participatory democracy.

At the end of the semester, a school-wide assembly would include favorite classroom role-plays of students. Role playing by students in social groups can demonstrate the social and psychological influences on smoking behavior and the range of alternatives available.

Pretest, posttest, and 1-year follow-up surveys would measure program participants' knowledge, attitudes, and behavior related to smoking. A closed-ended, self-administered questionnaire would be supplemented by face-to-face interviews with individual participants.

Budget

The estimated initial costs of a 12-week smoking prevention program are the following.

Salaries

1 salaried instructor or coordinator, 6 months at 25 percent time	\$3,750.
2 creative arts and drama consultants, 10 hours at \$200 per hour	2,000.

Materials

Classroom: books, charts, and art materials	1,000.
Gym: jump ropes, batons, hurdles, and jerseys	2,500.
Subtotal	\$9,250.

Administrative overhead

Approximately 20 percent of subtotal

\$9,250.

1,850.

Total \$11,100.

Conclusion

An estimated 75 percent of smokers become dependent on cigarettes by age 20 (24). In order to reduce the prevalence of smoking among women in the United States, prevention efforts need to target teenagers before they initiate the behavior.

Smoking in the adolescent female population can be discouraged through a combination of methods, such as knowledge, skill acquisition, role playing, and the development of formal (school regulations) and informal (school norms) measures. This proposed program is important because of the high rates of smoking among adolescent girls in the United States and because evidence suggests that cigarette smoking can be the first stage in a progressive cycle of drug dependency and addiction (25). The program addresses those factors leading to the initiation of smoking among adolescents by providing attractive alternatives to the cycle of addiction.

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